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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,359	12/11/2000	Yoshikazu Sano	A33803 PCT	7019

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/719,359

Applicant(s)

SANO ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 16-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

**Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/7/03 has been entered.

**Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 16-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 55-27373 in view of Dando et al. (U.S. 5,908,914).

Using an English translation of the Japanese reference provided by the applicants, it is noted that JP 55-27373 discloses a process wherein rosin such as wood rosin, tall oil rosin, polymerized rosin, or hydrogenated rosin is reacted with resol phenol resin and polyhydric alcohol. The resol phenol resin is prepared by reacting phenol and formaldehyde in the presence of a volatile base catalyst such as ammonia or amine at 40-100 °C. Either the rosin is first reacted with resol phenol resin at 150-280 °C followed by reaction with polyhydric alcohol or the rosin is first reacted with polyhydric alcohol followed by reaction with resol phenol resin at 150-280 °C. The process produces a resin which has acid number less than 30, softening point of 130-190 °C, and solubility of 7 times in petroleum hydrocarbon solvent which has boiling point of 240-330 °C and aniline point of 65-100 °C. The resin is used as a binder in printing ink (claim 1, page 2, lines 18-23, page 4, lines 11-18, page 5, lines 17-19, pages 8, lines 11-20 and 22-23, page 9, lines 6-15 and 17-18, and page 10, lines 8-23). It is noted that while the present claims refer to the

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resin produced by the process as a phenol modified rosin ester and JP 55-27373 refers to the resin produced by the process as a rosin modified phenolic resin, given that JP 55-27373 discloses process identical to that presently claimed including identical ingredients as well as identical order in which the ingredients are reacted, it is clear that the process of JP 55-27373 would produce the same product as presently claimed.

Although there is no explicit disclosure of the nitrogen residue content resulting from the volatile base catalyst, given that JP 55-27373 discloses amine catalyst identical to that presently claimed so that the catalyst must necessarily also possess the same volatility as the claimed catalyst as well as the same reactivity with phenol-formaldehyde as the claimed catalyst and further given that JP 55-27373 discloses the same process temperatures for reacting phenol with formaldehyde to form the resol phenol resin and for reacting rosin or polyhydric alcohol ester of rosin with resol phenol resin as presently claimed, all of which would affect the amount of residual nitrogen, and further given that JP 55-27373 disclose (page 8, lines 23-24) using 0.01-5%, based on amount of phenol, of volatile base catalyst which overlaps the amount utilized in the present invention (see, for instance, example 1 in the present specification), it is clear that the resin formed by the process of JP 55-27373 would intrinsically possess the same nitrogen residual content as presently claimed.

The difference between JP 55-27373 and the present claimed invention is the requirement in the claims of reacting the phenol and formaldehyde in a closed reactor under increased pressure when forming the resol phenol resin.

Dando et al., which is drawn to phenolic resol resins, disclose that preparing phenol-formaldehyde in a sealed reactor under pressure has several advantages over using an open

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reactor such as higher yield resol resin per unit time, lower yields of unreacted starting materials, and shorter cycle times. Further, examples 4-5 show that if the pressure is increased, the cycle time decreases while the resin yield increases (col.2, lines 43-67 and col.14, lines 30-50).

In light of the motivation for reacting phenol and formaldehyde in a closed reactor under increased pressure disclosed by Dando et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to react the phenol and formaldehyde in JP 55-27373 in a closed reactor under increased pressure in order to produce higher yield resol resin per unit time, lower yields of unreacted starting materials, and shorter cycle times, and thereby arrive at the claimed invention.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 55-27373 in view of Dando et al. as applied to claims 16-18 and 20-21 above, and further in view of JP 7-126338 of DeBlasi et al. (U.S. 4,857,624).

The difference between JP 55-27373 in view of Dando et al. and the present claimed invention is the requirement in the claims of the weight average molecular weight of the phenol modified rosin ester.

JP 7-126388, which is drawn to a process for preparing phenol modified rosin ester suitable for use in inks, disclose that the resin has weight average molecular weight ( $M_w$ ) of 30,000-250,000 and that if  $M_w$  is less than 30,000, the resistance to misting is reduced (claim 1 and page 5, lines 4-7).

Alternatively, DeBlasi et al., which is drawn to phenolic modified rosin ester for printing inks, disclose the use of phenolic modified rosin ester having high  $M_w$ , for instance

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approximately 80,000 or 200,000 and disclose that using such phenolic modified rosin ester produces inks which exhibit more consistent printing results, improved hold out, and excellent reducibility as well as good gloss and good film forming properties (col.3, lines 20-31, col.4, lines 1-66, and examples 1 and 3).

In light of the motivation for using phenol modified rosin ester with specific  $M_w$  disclosed by either JP 7-126338 or DeBlasi et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use resin with such  $M_w$  in JP 55-27373 in order to produce an ink with good resistance to misting or alternatively, consistent printing results, improved hold out, and excellent reducibility, and thereby arrive at the claimed invention.

#### **Response to Arguments**

6. Applicants' arguments with respect to Oishi et al. (U.S. 4,002,585) and Frihart et al. (U.S. 6,022,947) have been considered but they are moot in view of the discontinuation of these references against the present claims.

7. Applicants' arguments and 1.132 declaration filed 4/7/03 have been fully considered but, with the exception of arguments relating to Oishi et al. and Frihart et al., they are not persuasive.

Specifically, applicants argue that JP 55-27273 does not intrinsically disclose or suggest the claimed nitrogen residual content.

Applicants argue that it is not clear that the missing descriptive matter, i.e. nitrogen residual content, "necessarily flows" from the teachings of the prior art. Applicants have also submitted a 1.132 declaration which compares ink comprising binder with nitrogen residual

content within the scope of the present claims with ink comprising binder with nitrogen residual content outside the scope of the present claims. It is shown that the ink of the present invention is superior in terms of gloss, fluidity, resistance to emulsification, resistance to smudging, and/or drying time.

However, it is the examiner's position that the resin formed by the process of JP 55-27273 does intrinsically possess the same nitrogen residual content as presently claimed and that the presence of this nitrogen residual content does necessarily flow from JP 55-27273 for the following reasons.

Firstly, given that JP 55-27373 discloses amine catalyst identical to that presently claimed so that the catalyst must necessarily also possess the same volatility as the claimed catalyst as well as the same reactivity with phenol-formaldehyde as the claimed catalyst and further given that JP 55-27373 discloses the same process temperatures for reacting phenol with formaldehyde to form the resol phenol resin and for reacting rosin or polyhydric alcohol ester of rosin with resol phenol resin as presently claimed, all of which would affect the amount of residual nitrogen, it is clear that the resin formed by the process of JP 55-27373 would intrinsically possess the same nitrogen residual content as presently claimed.

Secondly, it is noted that page 8, lines 23-24 of JP 55-27273 (based on English translation provided by applicants) discloses that the catalyst is present in an amount of 0.1-5% based on the phenol component. Based on example 1 of the specification, which is also example 1 of the 1.132 declaration, which discloses phenol modified rosin ester which has nitrogen residual content of 200 ppm, it is calculated that there is present 3% (120/4000) catalyst based on the phenol component. Thus, given that JP 55-27273 uses same amount of catalyst as used in the



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present invention, it is clear that the phenol modified rosin ester of JP 55-27273 will intrinsically also possess nitrogen residual content as presently claimed.

As set forth in MPEP 2112, "in relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art". In light of the reasoning set forth above, it is the examiner's position that a factual basis has been provided to support the position that the phenol modified rosin ester of JP 55-27273 does intrinsically possess nitrogen residual content as presently claimed. Further, as set forth in MPEP 2112, given that the examiner has presented reasoning to support the position of inherency, the burden now shifts to the applicant to show an obvious difference.

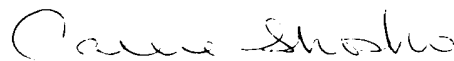
Applicants 1.132 declaration filed 4/7/03 has been considered but it is not persuasive. While it is agreed that the declaration shows that ink of the present invention, i.e. comprising binder with nitrogen residual content as presently claimed, is superior in terms of gloss, fluidity, resistance to emulsification, resistance to smudging, and/or drying time, given that JP 55-27273 already discloses binder which is obtained from the same type and amount of catalyst as presently claimed, and thus also possesses nitrogen residual content as presently claimed, the results of the declaration are not unexpected or surprising.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
June 17, 2003